



# Human Factors and Simulation for Airport Research

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## The Role of Simulation

- Determination of information requirements
- Examination of the roles of the different human operators
  - Controllers, pilots, and airlines
- Workload and Situation Awareness
- Safety assessments of airport design and tools
  - Conflict/collision logic
  - Runway occupancy
  - Runway crossings
- Development and testing of airport functions and tools

## Real-Time and Fast-Time Human Performance Assessments

- Real-time assessments (time-consuming and expensive)
  - Human-in-the-Loop Simulation
    - Allows for strategic methodology
    - Allow for off-nominal testing
  - Field Testing
    - Enhanced realism
    - Restricted methodology
- Human Performance Models (fast-time)
  - Validation of these models is still in the early stage
    - Air MIDAS & TOPAZ assessments by SJSU & the NLR
    - APEX at NASA Ames